DESCRIPTION

Parkinsonism & Related Disorders publishes the results of basic and clinical research contributing to the understanding, diagnosis and treatment of all neurodegenerative syndromes in which Parkinsonism, Essential Tremor or related movement disorders may be a feature.

Regular features will include: Review Articles, Point of View articles, Full-length Articles, Short Communications, Case Reports and Letter to the Editor.

Topics covered will include:
- Molecular biology
- Neuroanatomy
- Neurophysiology/electrophysiology
- Neuropharmacology
- Neuropsychology
- Neuroimaging
- Neurotoxicology
- Clinical phenomenology
- Surgical and pharmacological treatment
- Transplantation studies
- Relationship with aging
- Epidemiology/environmental impact factors
- Rehabilitation

The journal will form a truly international channel of communication between the research and clinical communities.

AUDIENCE

Parkinsonism & Related Disorders will be essential reading for all neurologists specialising in Parkinson’s Disease and other movement disorders, neuropathologists, neuropharmacologists, neurochemists, neurosurgeons, gerontologists and molecular neurobiologists. The Journal will also be of interest to general neurologists, psychiatrists, neuroimaging specialists, occupational and physical therapists.
IMPACT FACTOR

2018: 4.360 © Clarivate Analytics Journal Citation Reports 2019

ABSTRACTING AND INDEXING

Current Contents - Clinical Medicine
Neuroscience Citation Index
Science Citation Index
Embase
PubMed/Medline
PsycINFO
Scopus

EDITORIAL BOARD

Editors-in-Chief
V. Bonifati, Erasmus MC, University Medical Center, Dept. of Clinical Genetics, Dr. Molewaterplein 40, 3015 GD, Rotterdam, Netherlands
H. Fernandez, Cleveland Clinic Neurological Institute, Center for Neurological Restoration, 9500 Euclid Avenue, S-6, Cleveland 44195, Ohio, USA

Associate Editors
Y. Compta, Hospital Cliníc de Barcelona, IDIBAPS, Universitat de Barcelona (UB), Barcelona, Catalonia, Spain
Z. Mari, Cleveland Clinic, Las Vegas, Nevada, USA
J. Miyasaki, University of Alberta, Edmonton, Alberta, Canada
A. Puschmann, Lund University, Lund, Sweden
I. Rektorova, Masaryk University, Brno, Czech Republic
E. Uc, University of Iowa, Iowa City, Iowa, USA

Section Editors
R. Bhidayasiri, Chulalongkorn University, Bangkok, Thailand
T. Mestre, University of Ottawa, Ottawa, Ontario, Canada

Editorial Board
F. Alarcon, Quito, Ecuador
R. Alcalay, New York, New York, USA
T. Anderson, Christchurch, New Zealand
J.A. Bajwa, Riyadh, Saudi Arabia
O. Bandmann, Sheffield, UK
J. Boyd, Burlington, VT, USA
N. Brüggemann, Lübeck, Germany
R. Camicioli, Edmonton, Alberta, Canada
W.P. Cheshire, Jacksonville, Florida, USA
K. Chou, Ann Arbor, Michigan, USA
R. Cilia, Milan, Italy
M. Coelho, Lisbon, Portugal
M.F. Contarino, Leiden, Netherlands
M.R. Cookson, Bethesda, Maryland, USA
M. Della Coletta, Flores, Manaus, Brazil
R. Erro, Salerno, Italy
G. Fabbrini, Roma, Italy
A. Fasano, Toronto, Ontario, Canada
D. Floden, Cleveland, Ohio, USA
S. Frank, Boston, Massachusetts, USA
S. Fujioka, Fukuoka, Japan
Z. Gan-Or, Montreal, Quebec, Canada
A. Hassan, Rochester, Minnesota, USA
M. Heckman, Jacksonville, Florida, USA
M. Hirsch, Charlotte, North Carolina, USA
G. Hoeplinger, Munchen, Germany
T. Ikeuchi, Niigata, Japan
J. Jimenez-Shahed, Houston, Texas, USA
H.A. Jinnah, Atlanta, Georgia, USA
J. M. Kim, Seoul, The Republic of Korea
D. Koziorowski, Warsaw, Poland
R. Krueger, Esch-Belval, Luxembourg
S. Lewis, Sydney, New South Wales, Australia
T.T. Lim, Cleveland, Ohio, USA
E. A. Macklin, Boston, Massachusetts, USA
W. Mandemakers, Rotterdam, Netherlands
R. Mehanna, Houston, Texas, USA
W. Meissner, Bordeaux, France
N. Mencacci, Chicago, Illinois, USA
E. Moro, Grenoble, France
F. B. Nahab, La Jolla, California, USA
J.A. Palma, New York, New York, USA
R. Pickering, Southampton, England, UK
M. Quadri, Rotterdam, Netherlands
M. Rudzinska, Katowice, Poland
B. Schmand, Amsterdam, Netherlands
S. A. Schneider, Munich, Germany
M. Schulzer, Vancouver, British Columbia, Canada
M.A. Schwarzschild, Boston, Massachusetts, USA
M. Skorvanek, Košice, Slovak Republic
A. J. Stoessl, Vancouver, British Columbia, Canada
A. Tessitore, Napoli, Italy
D.D. Truong, Fountain Valley, California, USA
Y. Ugawa, Fukushima, Japan
J.A. van Gerpen, Jacksonville, Florida, USA
W. Vandenberghe, Leuven, Belgium
A. Videnovic, Boston, Massachusetts, USA
R.R. Walsh, Phoenix, Arizona, USA
Y.R. Wu, Taipei, Taiwan
R. Yadav, Bangalore
D. Zielonka, Poznan, Poland

Founding Editor
D.B. Calne, OC FRSC 1986-2008

Former Editors-in-Chief 2008 - 2017
Ron Pfeiffer
Zbigniew Wszolek
GUIDE FOR AUTHORS

Types of Paper

Review Articles of specialized topics within the scope of the journal. The maximum length allowed will be 4,000 words, not including the abstract (max. 250 words) or the references.

Point of View Articles on challenged conventional ideas or hypotheses and which could invite further discussion or debate through correspondence or articles in the journal. The manuscript should not exceed 2000 words with 2 figures and 30 references.

Full-length Articles reporting original results of research within the field of Parkinsonism and Related Disorders. The maximum length allowed will be 3,000 words, not including the abstract (mx. 250 words) or the references (maximum 30). There should be no more than 4 illustrations tables/figures. Authors may include additional illustrations as esupp files, which will only appear in the online version of an accepted manuscript.

Short Communications reporting on research that has progressed to the stage where preliminary publication is appropriate. The maximum length allowed will be 2,000 words not including abstract (max.250 words) or the references (maximum 12). There should not be more than 2 illustrations (figure/table).

Correspondence will be considered for publication: If they describe interesting observations. The maximum length allowed will be 750 words, 5 references and 1 illustration. A 50-word abstract is required in the submission box for the benefit of potential reviewers. Please do not include the abstract in the manuscript file. Section headings are not be used in the text.

Movement disorder rounds is a new section in Parkinsonism and Related Disorders journal featuring two parts in a full manuscript. For the first part, submission will come from interested authors presenting a movement disorder case that is considered to be of high educational value. The submission format should reflect what actually happens during a teaching round, starting with a pertinent case history, followed by relevant examination and investigations, part of which can be supplemented by video clips, figures, or diagrams if necessary. The maximum length allowed for the case presentation will be 750 words.

For each Movement disorder rounds issue Cases that will be considered for this section include: cases with diagnostic complexity requiring expert interrogation of history, physical signs and additional diagnostic tests before a final diagnosis is established; genotype-phenotype correlation case reports, to cover the expanding field of genetics in movement disorders (in this format, we will value the explanation of new genetic testing methodologies and interpretation of results, along with the interest of reporting novel genotype-phenotype correlation); cases with outstanding clinical history and physical signs that should not be missed by physicians in clinical practice; and, case presentations of a movement disorder with historical value because it corresponds to earlier descriptions of a known movement disorder or was described in a historical figure or related to a relevant historical event. Upon final acceptance of the case for this section, a separate expert commentary will be written or solicited by the Section Editors of Movement Disorder Rounds, which will then be published together with the original article. The expert will be invited to provide teaching points for the case (e.g. critiquing physical signs, thinking process on prioritized differential diagnosis, interpretation of selected investigations and outlining management strategies). The expert comments will be published in the form of a "twin paper" with a maximum length allowed for the second part will be of 750 words.

Please note that Parkinsonism & Related Disorders does not accept books for review.

General Guidelines: Papers should be written in clear and concise English. Authors should consult a recent issue of the journal for style if possible. The journal uses Parkinson's disease rather than Parkinson disease. Case Reports are only considered for publication as Correspondence or Movement disorder rounds. Open label studies, in most cases, will only be considered as Correspondence.

Contact details for submission
E-mail: prd@elsevier.com
For further details on how to submit online, please refer to the EES Tutorial for authors or visit our Support Center.

BEFORE YOU BEGIN

Ethics in publishing
Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.

Human and animal rights
If the work involves the use of animal or human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans http://www.wma.net/en/30publications/10policies/b3/index.html; EU Directive 2010/63/EU for animal experiments http://ec.europa.eu/environment/chemicals/lab_animals/legislation_en.htm; Uniform Requirements for manuscripts submitted to Biomedical journals http://www.icmje.org. Authors should include a statement in the manuscript that the study received ethical approval and that consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed. Evidence of an institutional waiver must be included when necessary.

Declaration of interest
All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in two places: 1. A summary declaration of interest statement in the title page file (if double-blind) or the manuscript file (if single-blind). If there are no interests to declare then please state this: ‘Declarations of interest: none’. This summary statement will be ultimately published if the article is accepted. 2. Detailed disclosures as part of a separate Declaration of Interest form, which forms part of the journal's official records. It is important for potential interests to be declared in both places and that the information matches. More information.

Submission declaration and verification
Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service Crossref Similarity Check.

Preprints
Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

Use of inclusive language
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader; should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

Contributors
Each author is required to declare his or her individual contribution to the article: all authors must have materially participated in the research and/or article preparation, so roles for all authors should be described. The statement that all authors have approved the final article should be true and included in the disclosure.
**Authorship**

All authors should have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

**Changes to authorship**

Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed. Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

**Article transfer service**

This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again by the new journal.

**Copyright**

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (more information). Permitted third party reuse of gold open access articles is determined by the author's choice of user license.

**Author rights**

As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing

Find out how you can share your research published in Elsevier journals.

**Role of the funding source**

You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Funding body agreements and policies

Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the gold open access publication fee. Details of existing agreements are available online.
After acceptance, open access papers will be published under a noncommercial license. For authors requiring a commercial CC BY license, you can apply after your manuscript is accepted for publication.

**Open access**

This journal offers authors a choice in publishing their research:

**Subscription**
- Articles are made available to subscribers as well as developing countries and patient groups through our universal access programs.
- No open access publication fee payable by authors.
- The Author is entitled to post the accepted manuscript in their institution's repository and make this public after an embargo period (known as green Open Access). The published journal article cannot be shared publicly, for example on ResearchGate or Academia.edu, to ensure the sustainability of peer-reviewed research in journal publications. The embargo period for this journal can be found below.

**Gold open access**
- Articles are freely available to both subscribers and the wider public with permitted reuse.
- A gold open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.

For gold open access articles, permitted third party (re)use is defined by the following Creative Commons user licenses:

*Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)*

For non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

The gold open access publication fee for this journal is **USD 3200**, excluding taxes. Learn more about Elsevier's pricing policy: [https://www.elsevier.com/openaccesspricing](https://www.elsevier.com/openaccesspricing).

**Green open access**

Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see our open access page for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution's repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form. Find out more.

This journal has an embargo period of 12 months.

Please write your text in good English (American usage and spelling is preferred). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop [http://webshop.elsevier.com/languagediting/](http://webshop.elsevier.com/languagediting/) or visit our customer support site [https://service.elsevier.com](https://service.elsevier.com) for more information.

**Submission**

Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Please note that typesetters will require an editable document format should your article be accepted. For this reason we ask that your initial submissions be made as .doc(x) file types.
You should select the appropriate classifications from the list of scientific classifications, which will be used to help the editors select reviewers with the appropriate expertise, and an article type for your manuscript (Reviews, Full Length Article, Short Communications or letters etc).

Submit your article
Please submit your article via http://ees.elsevier.com/parkreldis/default.asp.

Refereeing
The editor assigned to a manuscript conducts an initial review. Some manuscripts will be rejected at this stage, others may be rejected with the suggestion that the submission be transferred to another journal. Submissions that pass the initial review are sent to external reviewers to ensure both accuracy and relevance; revisions may be required before the paper is finally accepted. In most cases you may be asked to resubmit your paper in which case it will be reviewed again to ensure that you have answered their questions and concerns. You should be aware that addressing reviewer's comments does not necessarily ensure publication, and the decision to publish will depend on the overall rating of your submission. When submitting a revised manuscript, please note that you will be asked to submit both a clean manuscript (with the revisions incorporated) and a revised manuscript (with the revisions highlighted).

Fast track Review and Publication
Authors with data they wish to be considered for the fast-track procedure should present clear-cut, novel findings of unusual and timely significance. Complex studies, even those of major importance, will not qualify, because it is unlikely that reviewers could handle them quickly. Fast-track papers are expected to be acceptable for publication in essentially the form submitted. Manuscripts that require substantial revision will not fit the criteria for fast-track processing. The maximum length allowed will be 2,000 words, 20 references and 3 illustrations (figures or tables).

Submission procedure
A. Explain in the cover letter why you are requesting fast-track review.
B. Explicitly state whether there is any overlap with already published or submitted work.

Review procedure
1. Within a maximum of 2 weeks the Editor-in-Chief will decide whether the paper can enter the fast track.
2. If the Editor-in-Chief denies fast-track review, the author is offered the option of having the manuscript placed in the regular review process. He or she must respond within a week or the paper is rejected. The review process and acceptance or rejection of a fast track paper will be decided within 5 weeks. This decision is final (rejected manuscripts will not enter the ordinary review process).
3. If acceptance requires minor changes they must be performed by the authors within a week.
4. Accepted papers will published in the next available issue.

PREPARATION
Peer review
This journal operates a single blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. More information on types of peer review.

It is important that the file be saved in the native format of the wordprocessor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the wordprocessor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier: https://www.elsevier.com/guidepublication). See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your wordprocessor.
Essential title page information

• **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.

• **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.

• **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. This responsibility includes answering any future queries about Methodology and Materials. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**

• **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Abstract

A structured abstract, by means of appropriate headings (Introduction, Methods, Results, Conclusion), should provide the context or background for the research and should state its purpose, basic procedures (selection of study subjects or laboratory animals, observational and analytical methods), main findings (giving specific effect sizes and their statistical significance, if possible), and principal conclusions. It should emphasize new and important aspects of the study or observations. The abstract should not exceed 250 words. Structured abstracts are not required for Reviews or Points of View.

Graphical Abstract

A graphical abstract is optional and can be added to all submissions except Letters. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership online. Authors must provide images that clearly represent the work described in the article. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. See https://www.elsevier.com/graphicalabstracts for examples. Authors can make use of Elsevier's Illustration and Enhancement service to ensure the best presentation of their images also in accordance with all technical requirements: Illustration Service.

Highlights

Highlights are mandatory for all submissions except Letters. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate file in the online submission system. Please use ‘Highlights’ in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). See https://www.elsevier.com/highlights for examples. Highlights are not required for correspondence. Please do not include Highlights in the manuscript file.

Formatting of funding sources

List funding sources in this standard way to facilitate compliance to funder's requirements:

**Funding:** This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].
It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Artwork**

*Electronic artwork*

**General points**

- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.

A detailed guide on electronic artwork is available.

**You are urged to visit this site; some excerpts from the detailed information are given here.**

**Formats**

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format. Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please ‘Save as’ or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

- **EPS (or PDF):** Vector drawings, embed all used fonts.
- **TIFF (or JPEG):** Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
- **TIFF (or JPEG):** Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
- **TIFF (or JPEG):** Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.

**Please do not:**

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

**Color artwork**

Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article.** Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.

**Illustration services**

Elsevier's Author Services offers Illustration Services to authors preparing to submit a manuscript but concerned about the quality of the images accompanying their article. Elsevier's expert illustrators can produce scientific, technical and medical-style images, as well as a full range of charts, tables and graphs. Image 'polishing' is also available, where our illustrators take your image(s) and improve them to a professional standard. Please visit the website to find out more.

**Figure captions**

Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.
**Tables**
Please submit tables as editable text and not as images. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules.

**References**
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications should not appear in the reference list, but may be mentioned in the text. Citation of a reference as 'in press' implies that the item has been accepted for publication.

**Reference links**
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

**Data references**
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

**References in a special issue**
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

**Reference management software**
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

**Reference style**
**Text:** Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given. **Please ensure that all authors are listed.**

Example: '..... as demonstrated [3,6]. Barnaby and Jones [8] obtained a different result ....'

**List:** Number the references (numbers in square brackets) in the list in the order in which they appear in the text.

**Examples:**
Reference to a journal publication:
Reference to a book:
Reference to a chapter in an edited book:
Reference to a Data Citation:

Removing Field Codes From A Manuscript

Electronic reference field codes/hyperlinks are embedded in a document as a reference list is assembled. They link references in a manuscript to the reference program. Only the author can remove them and they must be removed as they interfere with the publisher’s software. To remove field codes please refer to your electronic reference program for instructions.

Journal abbreviations source

Journal names should be abbreviated according to the List of Title Word Abbreviations.

Video

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

All submissions including videos must be accompanied by a statement that the subject gave consent to be videoed for publication both in print and online. Parental consent must be obtained for subjects who are under age.

Supplementary material

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

Research data

This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.
Data linking
If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

Mendeley Data
This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. Before submitting your article, you can deposit the relevant datasets to Mendeley Data. Please include the DOI of the deposited dataset(s) in your main manuscript file. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the Mendeley Data for journals page.

Data statement
To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

Submission checklist
The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

Ensure that the following items are present:
One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address
• Phone numbers
All necessary files have been uploaded, and contain:
• Keywords
• All tables (including title, description, footnotes) - uploaded as separate files
• All figures - uploaded as separate files
• All figure captions/ legends
Further considerations
• Manuscript has been 'U.S. spell-checked' and 'grammar-checked'
• All references mentioned in the reference list are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Web)
• Color figures are clearly marked as being intended for color reproduction on the Web (free of charge) and in print (for which a charge will apply), or to be reproduced in color on the Web (free of charge) and in black-and-white in print
• If only color on the Web is required, please supply black-and-white versions of the figures for the print version
For any further information please visit our customer support site at https://service.elsevier.com.

AFTER ACCEPTANCE
As a service to the community, this journal makes available online the accepted manuscripts as soon as possible after acceptance. At this stage, the author's accepted manuscript (in both full-text and PDF) is given a Digital Object Identifier (DOI) and is fully citable, and searchable by title, author(s)
name and the full-text. The article also carries a disclaimer noting that it is an unedited manuscript which has not yet been copyedited, typeset or proofread. When the fully copyedited version is ready for publication, it simply replaces the author accepted manuscript version.

**Online proof correction**

Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.

If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

**Offprints**

The corresponding author will, at no cost, receive a customized Share Link providing 50 days free access to the final published version of the article on ScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's Author Services. Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

**AUTHOR INQUIRIES**

Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.

You can also check the status of your submitted article or find out when your accepted article will be published.

© Copyright 2018 Elsevier | https://www.elsevier.com